

ACV Schematic

LEAD FREE*

925GD (Globe)

Pressure Relief and Surge Anticipator Control Valve

Features

- Installed on branch of tee off main pumping header
- Opens when header pressure is above high pressure setpoint (pressure relief)
- Closes when pump header pressure is below high pressure setpoint (pressure relief)
- Opens when pump header pressure is below low pressure setpoint (surge anticipation)
- Hydraulic Accumulator System prevents system siphoning
- Pilot System Sense Line is field installed
- Adjustable Opening and Closing Speed
- High and Low Pressure Setpoints are separately adjustable

Standard Components

- 1 - Main Valve (905GD - Single Chamber)
- 2 - Adjustable Closing Speed
- 3 - Adjustable Opening Speed
- 4 - Pressure Relief Control
- 5 - Low Pressure Control
- 6 - Accumulator Drain Valve
- 7 - Test Valves
- 8 - Pressure Gauge
- 9 - Hydraulic Accumulator
- P - Position Indicator
- X - Isolation Cocks

Options and Accessories

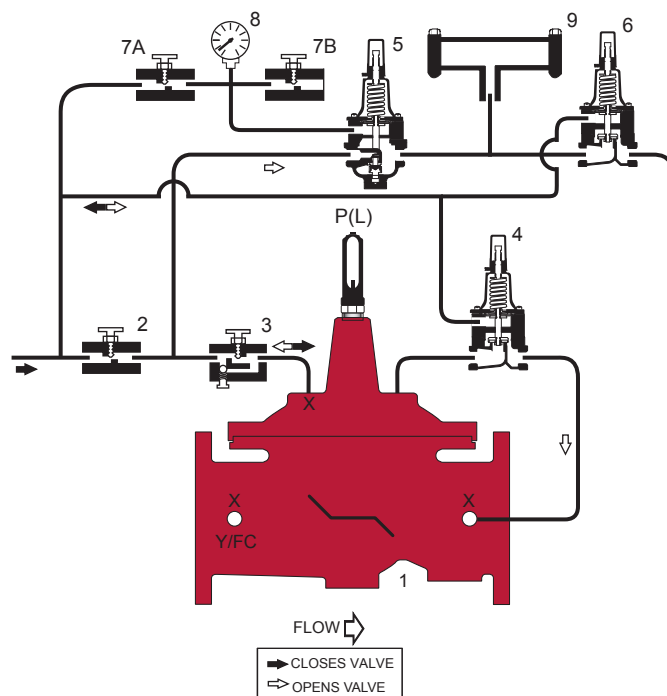
- L - Limit Switch

Operation

The ACV Combination Surge Anticipator and Pressure Relief Control Valve is designed to minimize the effects of water hammer and pressure surges resulting from: 1) Normal pump starting and stopping operations or 2) Mechanical or electrical power failure situations. The valve senses hydraulic pressure changes directly from the pump station discharge header, and opens to relieve pipeline surges when pump station discharge header pressure exceeds the adjustable spring setting of the high pressure relief pilot OR falls below the adjustable spring setting of the low pressure opening pilot. These two pressure conditions occur during normal pump starting and stopping operations or when an active pumping cycle is interrupted by electrical or mechanical failure.

High Pressure Relief Operation: When discharge header pressure exceeds the adjustable setpoint, the high pressure relief pilot opens, venting main valve cover pressure downstream, causing the valve to quickly open and dissipate the high pressure surge. When discharge header pressure falls below the adjustable setpoint, the high-pressure relief pilot closes, allowing pressure to fill the main valve cover chamber, slowly closing the valve. This condition occurs during normal pump starting and stopping operations.

Low Pressure Opening Operation (Surge Anticipation): When discharge header pressure falls below the adjustable setpoint, the low-pressure pilot opens and the drain pilot closes, "storing" main valve cover pressure in



the hydraulic accumulator. The main valve opens at an adjustable rate in anticipation of the returning high-pressure wave. This condition occurs during a mechanical or electrical power failure situation.

Valve Closing: When discharge header pressure recovers above the adjustable setpoint, the low-pressure pilot closes, allowing header pressure to fill the main valve cover chamber. The main valve closes at an adjustable rate to avoid creating additional pressure surges. The accumulator drain pilot opens, releasing the "stored" main valve cover pressure.

If discharge header pressure does not "recover" above the low-pressure opening setpoint, the "stored" pressure in the hydraulic accumulator allows the main valve to close, avoiding system siphonage or draining the pumping system.

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

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